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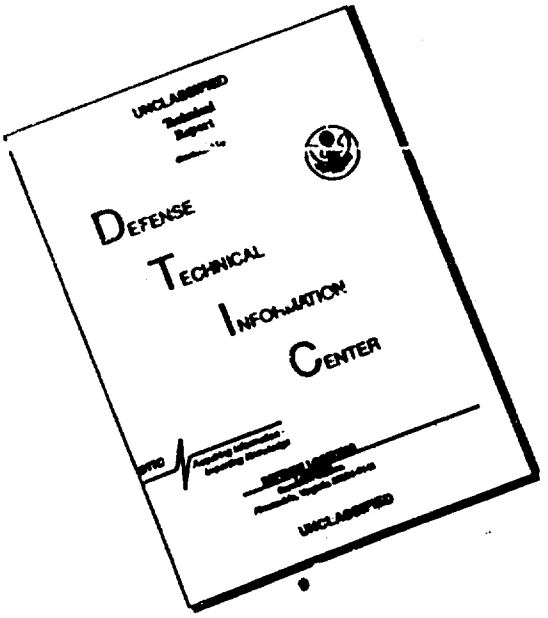

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Journal of Microbiology, Epidemiology and Immunobiology, USSR, No. 2, 1941, 3-13

To the Etiology of the Autumnal Outbreaks of Encephalitis in the DVK of USSR, by A. A. Smorodintsev, V. D. Neustroev and K. N. Chagin (From the N. K. Zkrav expedition and the virus branch of VIEM.)

(Conclusions only translated)

1. In September 1938-39, in certain regions of the Primorsk region of the DVK, there were registered sporadic cases of meningo-encephalitis, progressing with severe general toxic and brain symptoms and at least 50% lethal. The authors of this article established the nature of the agent of autumnal encephalitis and the probable role of the mosquito in the transmission of this disease.

2. Agent of infection - a neutrotropic (?) virus, pathogenic for mice and monkeys, isolated with ease from the brain of the corpse, blood and spinal fluid of patients. In 1938, there were isolated, by intracerebral the injection of white mice, 28 strains of virus from 28 tests of brain, 12 strains from 22 tests of blood, 3 strains from 4 tests of spinal fluid and 3 strains from 13 tests of urine.

3. According to the chart of experimental infection in white mice, to the pathogenicity of it for monkeys, to its filterability through ordinary bacteriological filters, to conservation of it in glycerine, the agent of these autumnal outbreaks should belong to the category of neutrotropic filtering viruses, agents of the seasonal encephalitis type B. By its antigenic and immunogenic properties the isolated virus seems to be fully identical with the virus of Japanese encephalitis and does not differ in the least from the virus of spring-summer encephalitis. Mice are infected with the virus of autumnal form of encephalitis upon any type of injection

of the infectious material into their bodies. They are most sensitive to the injection into the brain, less to the intranasal and least to the subcutaneous and intravenous. The virus causes an infection in monkeys identical with that of Japanese encephalitis.

4. The etiological role of the isolated virus from a patient, is confirmed by the data of a serological analysis. In convalescent patients' blood, 20-25 days from the start of the infection, there is detected antibodies, neutralizing the action of the given virus. These serums fully neutralize the virus of summer (Japanese) encephalitis and only partially the virus of spring-summer (tick) encephalitis. Rabbit serums, prepared by the introduction of the Japanese virus, fully neutralize the autumnal virus DVK. As the tests showed, with the cross adsorption of antibodies, this serum in contact with 20% brain emulsion of the agent of autumnal encephalitis looses its activeness in regard to the Japanese virus. This same serum of rabbits, immunized with virus of autumnal encephalitis, is exhausted upon contact with virus of Japanese encephalitis.

5. The agent of autumnal encephalitis DVK possesses a high pathogenecity for rodents. Upon intracerebral injection it causes a typical meningo-polio-encephalitis. The infected animals regularly hold virus in the blood. Field mice in these same conditions showed no signs of illness, but retained the virus in their brain for 20 days.

6. Taking into consideration that the paths of infection of people during summer encephalitis in Japan is insufficiently established and connected with drop transmission of the infectious agent, or with the bite of mosquitoes of the types Aedes and Culex, we conducted tests aimed at

detecting the virus in the nasopharynx of patients and those living around them. Results of these searches were completely negative. From the mosquitoes, gathered in the centers, were isolated 4 strains of virus, pathogenic for white mice and proving identical with virus of encephalitis, isolated from the brains of humans.